



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,353	02/26/2004	Hong-long Wung	10785-US-PA	2352
31561	7590	04/01/2005	EXAMINER	
JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE 7 FLOOR-1, NO. 100 ROOSEVELT ROAD, SECTION 2 TAIPEI, 100 TAIWAN			HAM, SEUNGSOOK	
			ART UNIT	PAPER NUMBER
			2817	
DATE MAILED: 04/01/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/708,353

Applicant(s)

WUNG ET AL.

Examiner

Seungsook Ham

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

Claims 1-6 are objected to because of the following informalities:

In claim 1, line 11, "exits" should be corrected to --exists--. Appropriate correction is required.

Claims 5 and 10 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

The subject matter of claims 5 and 10 are already recited in claims 1 (line 7) and 7 (lines 6 and 7), respectively.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 2 and 8, it is unclear as to how input and output ports are located in relation to resonators for a weak cross coupling.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2817

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 2003/0085780) in view of Yamaguchi (JP 02-206201).

Wang (figs 6 and 11) discloses a parallel-coupled-resonator coupled line filter comprising: an input port  $P_{i6}$ , a first resonator  $L_{61}$ ,  $C_{61}$  is coupled to the input port; a second resonator  $C_{62}$ ,  $L_{62}$  whose both ends are shorted to ground, and coupled to the first resonator (paragraph [0030]); a third resonator  $C_{63}$ ,  $L_{63}$  is coupled to the resonator and cross coupling  $C_{64}$  exists with the first resonator; and output terminal  $P_{o6}$  coupled to the third resonator.

Wang does not show each resonator is bent. However, it is well known in the art to bent a resonator to reduce the size of the filter. Yamguchi (figs. 1-4) discloses a similar filter having each transmission line is bent/folded to reduce the size of the filter device.

It would have been obvious to one of ordinary skill in the art to bent each resonator in the device of Wang to reduce the size of the filter device as taught by Yamaguchi (see abstract).

Regarding claim 2 (insofar as understood), providing input and output ports in a same direction resulting in a weak cross coupling is considered as an obvious modification since Wang (see fig. 5, see input and output ports 16a, 16b) suggests to providing input and ouput ports in a same direction with resonators for a coupling.

Art Unit: 2817

Yamaguchi (fig. 1) also shows input and output ports 11, 12 disposed in a same direction as the resonator for coupling.

The specific parameters for dielectric substrate and resonators as recited in claims 4 and 6 are considered as obvious design modifications to achieve desired filter responses, and it requires only a routine skill in the art.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (JP 63-219202) in view of Ikeda (JP 03-049301).

Ishikawa et al. (fig. 1) discloses a filter comprising: an input port 4d, a first resonator 4a is coupled to the input port; a second resonator 4c whose both ends are shorted to ground (coupled to ground electrodes 3a, 3b), and coupled to the first resonator (e.g., electromagnetically coupled); a third resonator 4b is coupled to the resonator and cross coupling C7 exists with the first resonator; and output terminal 4e coupled to the third resonator.

Ishikawa et al. does not show each resonator is bent. However, it is well known in the art to bent a resonator to reduce the size of the filter. Ikeda (fig. 1(a)) discloses a similar filter having each resonator is bent/folded to reduce the size of the filter device.

It would have been obvious to one of ordinary skill in the art to bent each resonator in the device of Wang to reduce the size of the filter device as taught by Ikeda (see abstract).

Regarding claims 2 and 8 (insofar as understood), providing input and output ports in a same direction resulting in a weak cross coupling is considered as an obvious

Art Unit: 2817

modification since Ikeda (fig. 1) also shows input and output ports 11, 12 disposed in a same direction as the resonators 13, 16 for coupling.

The specific parameters for dielectric substrate and resonators as recited in claims 4 and 6 are considered as obvious design modifications to achieve desired filter responses, and it requires only a routine skill in the art.

Regarding claim 7, providing first and third resonators with both ends open circuited is considered as an obvious design modification to achieve a desired filter response since such design technique is well known in the art (see Ikeda (fig. 1a) shows each resonator 13-16 having both ends are open-circuited).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Rahman et al. (fig. 1) and Takeda (fig. 2B) disclose a filter device having a cross coupling between the first and third resonators.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seungsook Ham whose telephone number is (571) 272-2405. The examiner can normally be reached on Monday-Thursday, 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2817

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Seungsook Ham  
Primary Examiner  
Art Unit 2817

sh